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strategic automotive product data standards industry group

SASIG
3D-MBE Workgroup

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AIAG & SASIG MBE Workgroup

SASIG is a global consortium of automotive standards organizations.

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3D-MBE Working Group

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Vision	• Move the automotive industry to 3D Model Based Enterprise (3D-MBE)
Mission	• To Promote the implementation of the 3D-MBD model to enable seamless sharing of Product information within the extended enterprise and the Automotive industry
Scope	• 3D Model Based Design Penetration (AIAG) o Drawing Elimination, Virtual Validation, 3D Work Instructions • 3D Model Based Design Obstacle Elimination (JAMA) o Die Engineering, Spot Welding, Inspection, Service Manuals • 3D Model Based Design Exchange (GALIA)
Deliverables	3D-MBE White Paper • Introduction to 3D-MBE • Survey Results • Maturity Index / Self Assessment • Best practices guideline to achieve 3D-MBE maturity • 3D-MBE Functional Requirements derived from the 3D-MBE initial 5 use cases

3D-MBE Vision

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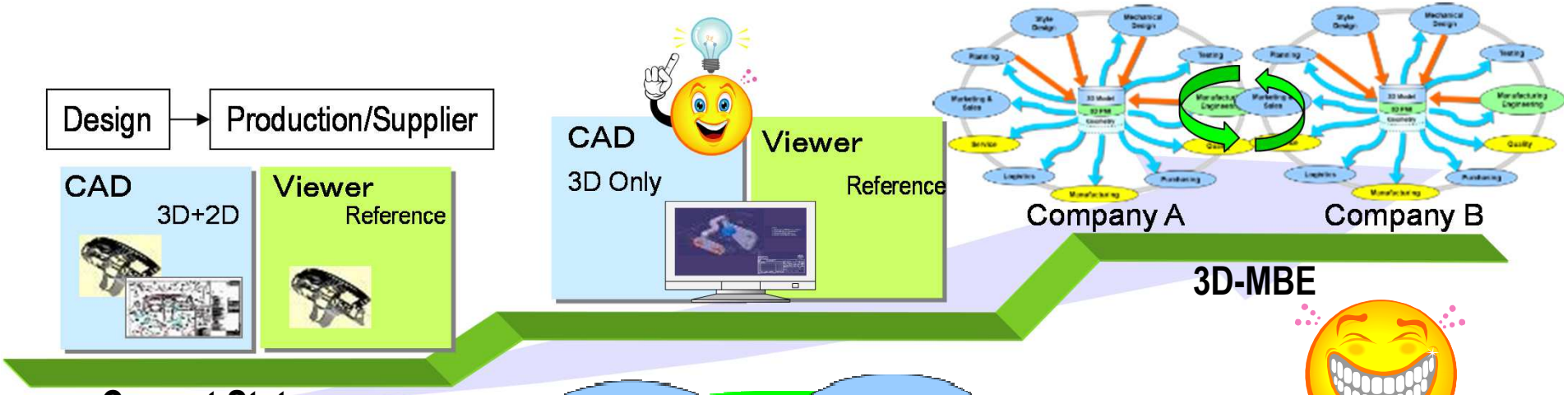
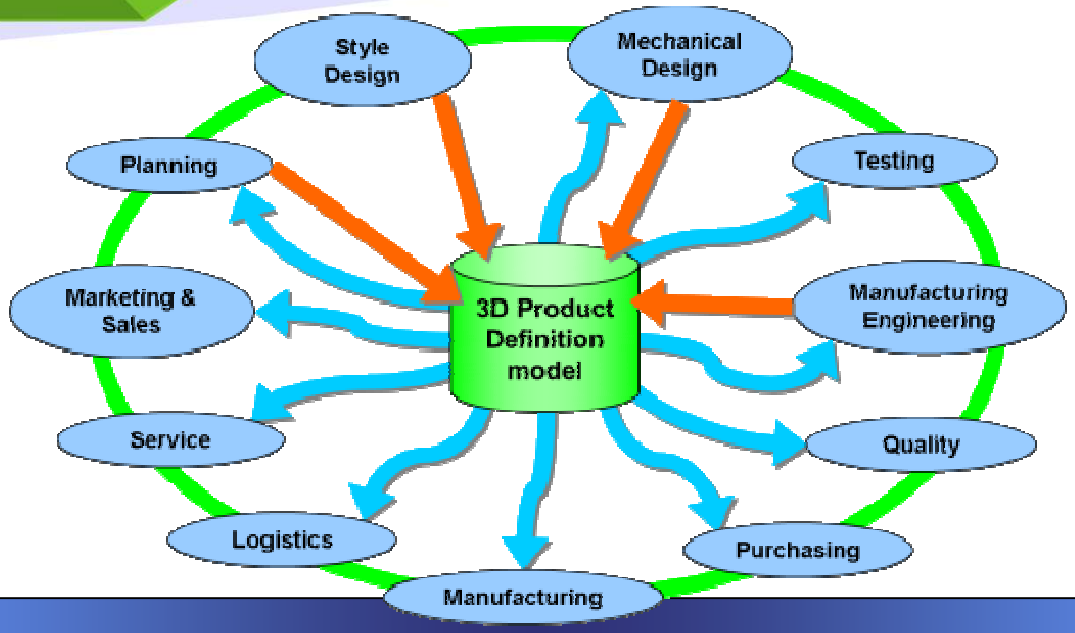
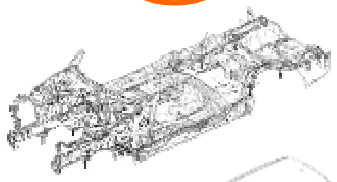
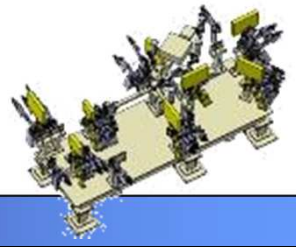
To Promote the implementation of the 3D-MBD Model to enable seamless sharing of Product information within the extended enterprise and the Automotive industry









SASIG 3D-MBE Workgroup Roadmap

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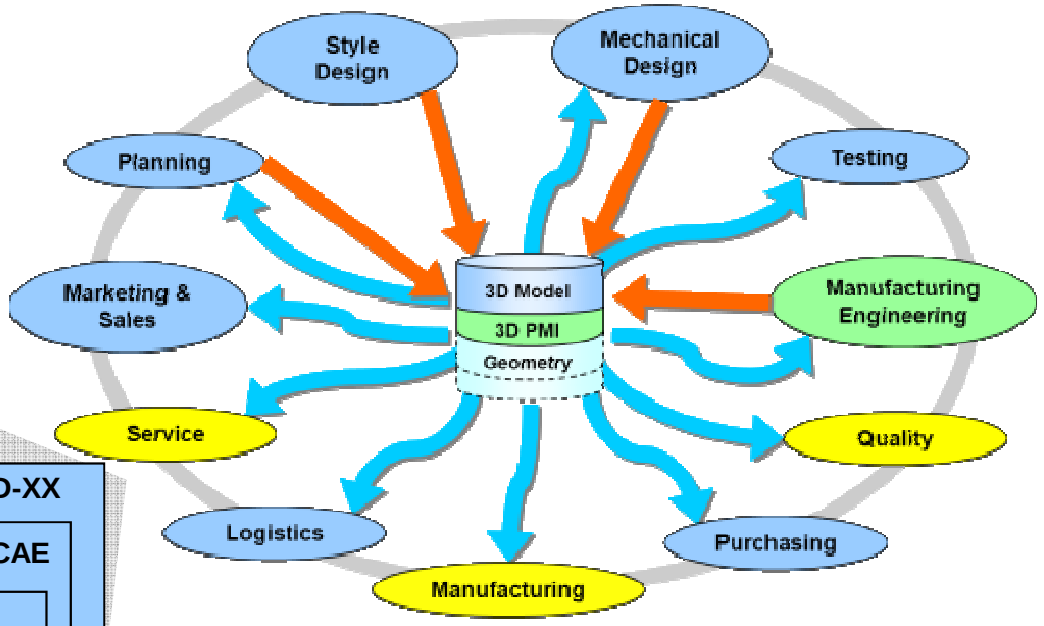

3D-MBD Model Requirements & Best Practices Matrix

- Die Engineering
- Spot Welding
- Inspection Quality Check
- Service Manual
- Drawing Elimination (3D PMI)

3D-MBD Model Requirements & Best Practices Matrix

- Virtual Validation
- 3D Work Instructions
- 3D-MBE Data Exchange

3D-MBD

3D-MBD-CAE

3D-MBD-XX

2015 **2017** **....** **Future**

MBE Workgroup Participants

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- AIAG – 15+ active members (OEMs, Tier1s & Software Providers)
- JAMA – OEMs, Suppliers and Software Vendors (50+)
- GALIA – PSA & Renault, Faurecia, Valeo, Continental

What is the role of a Drawing?

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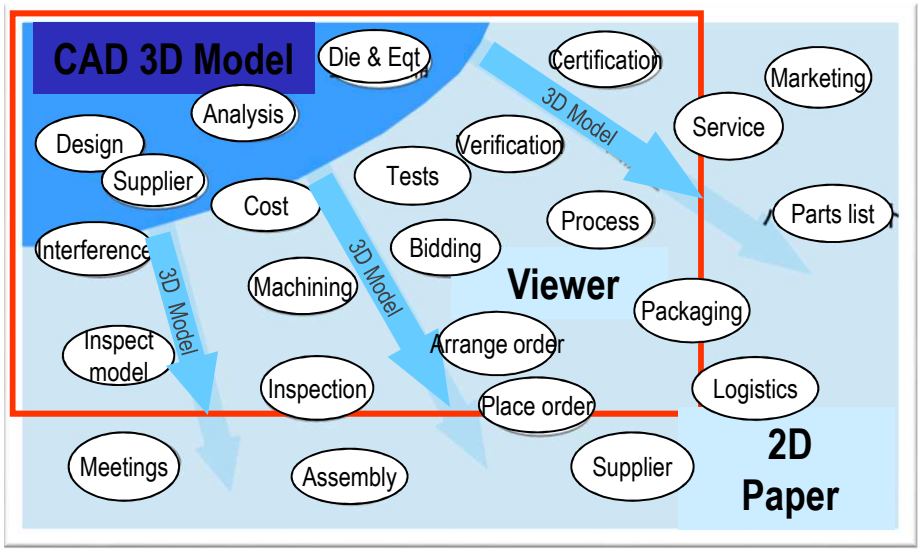
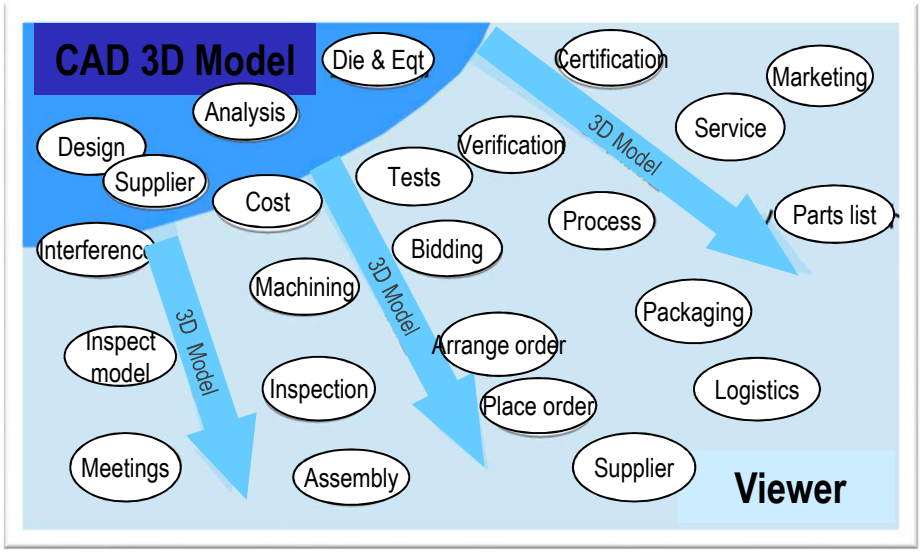


Current State



Future State

Too big of a jump

All major Automotive Companies have been trying for the past 10 years to implement full 3D.

Drawing Automation Need

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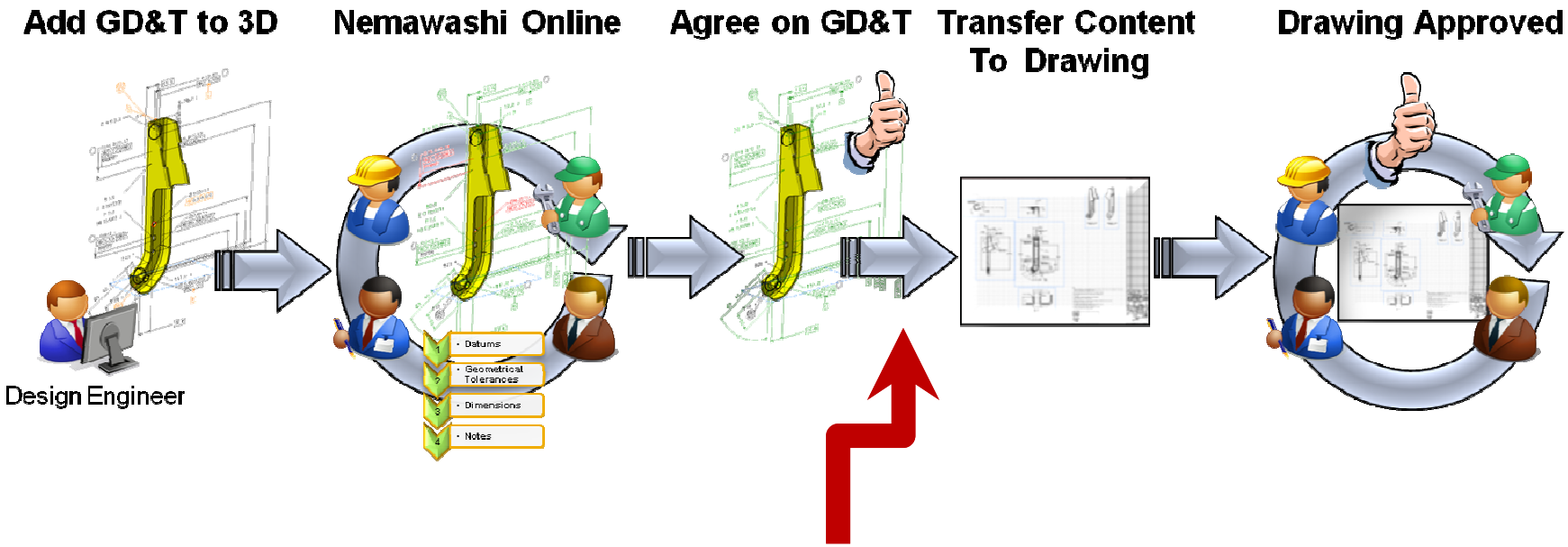
Drawing generation from 3D GD&T models is perceived as duplicate work, which hinders the move to a Model Based Environment. Model Based environment adds significant improvements to collaboration and GD&T Quality



How to Bridge the Gap in the Short Term?

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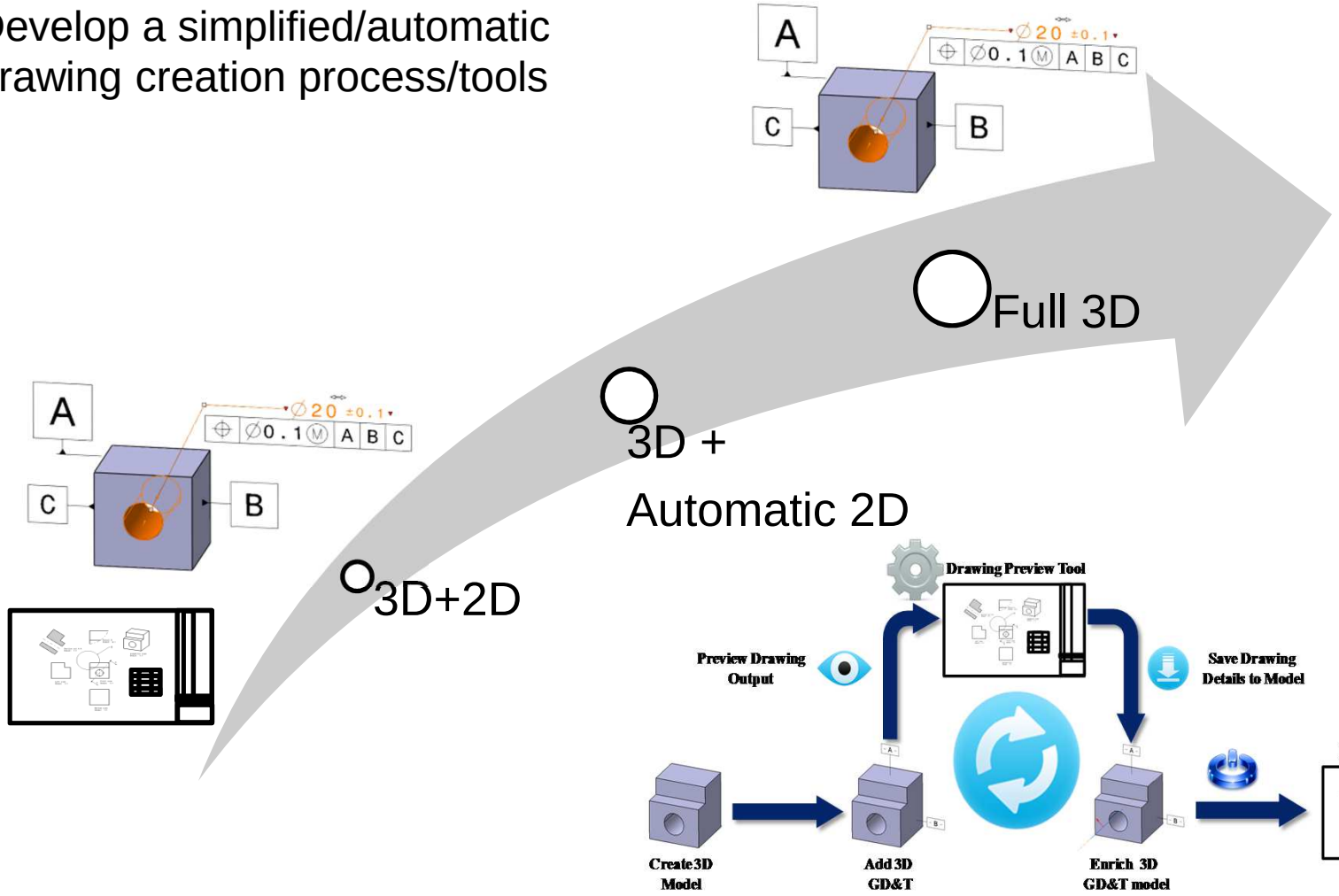
Develop a simplified/automatic drawing creation process/tools



How to Bridge the Gap in the Long Term?

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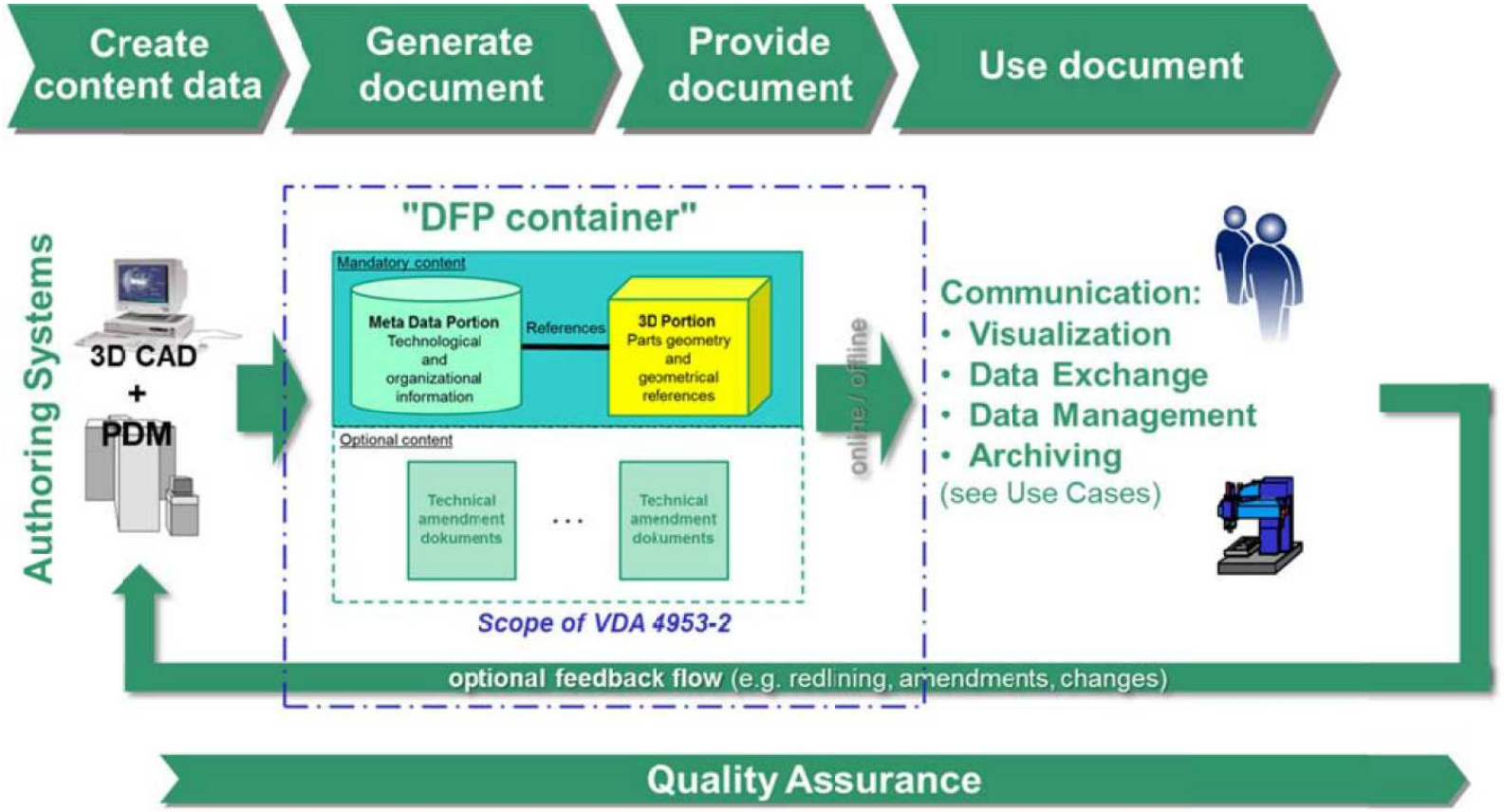
Drawing Free Product Documentation in a “Container”

That captures geometrical, technological and onrganizational (previously drawing) data of the product



MBE Self Assessment Tool

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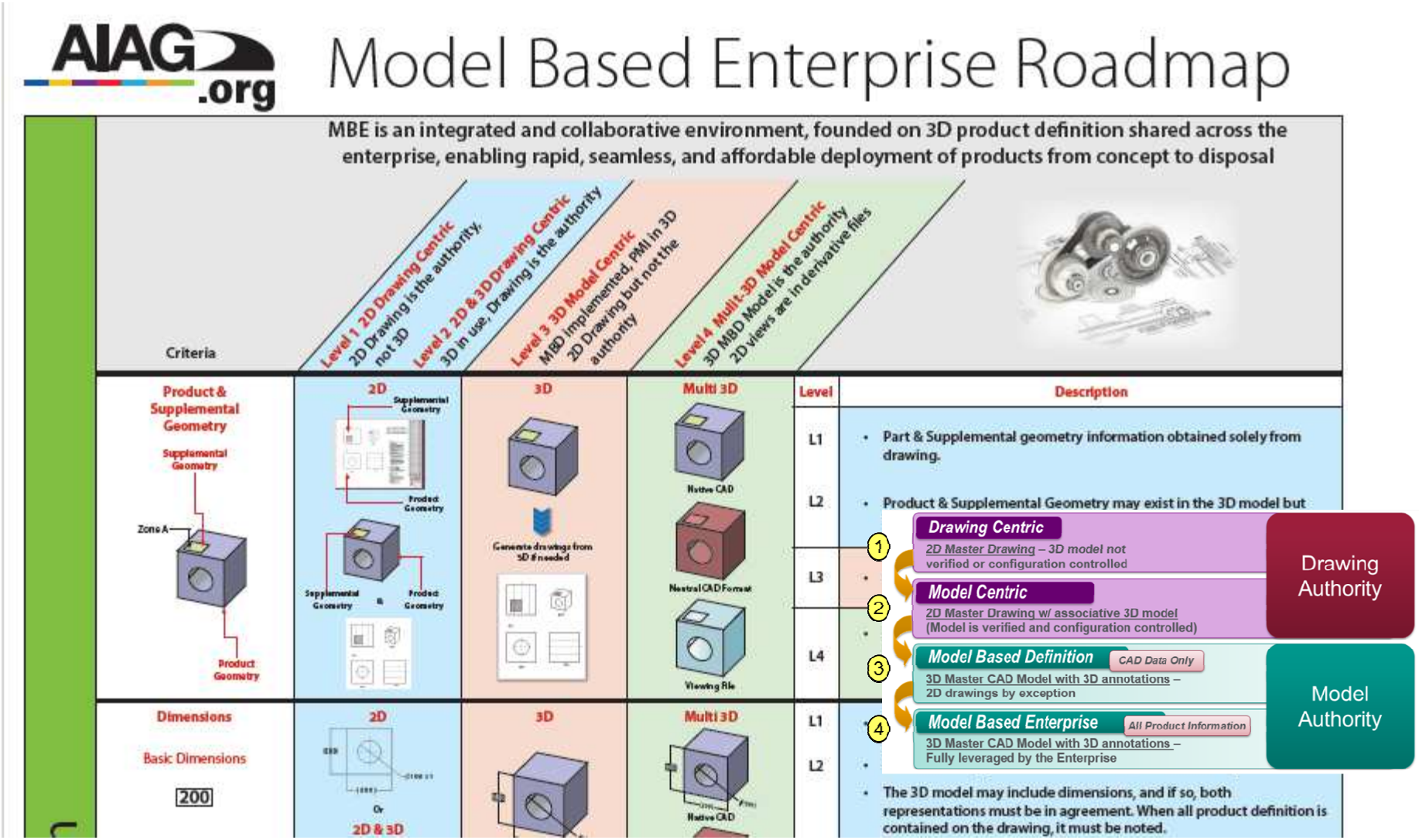

3D-MBE White Paper Content

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1. Introduction
   - What is 3D-MBE?
2. Background
   - History, workgroup scope, objectives
3. Current State of 3D-MBE in the Automotive Industry
   - Where we are
   - Survey results & observation summary
4. Future State
   - Where we are going
5. Usage & Benefits
   - Benefits & ROI (Return on Investment)
6. Transition to 3D-MBE
   - Maturity model & “how to move to next level”
   - Automatic 2D & Drawing Free Container
7. 3D-MBD Functional Requirements
   - Explanation & observations summary of CAD and Translator functional requirements activity - 5 use cases
8. Path to 3D-MBE
   - The How
   - Enablers & Roadblocks
9. Conclusion/Summary

Man-hour reductions Using 3D Annotated Model

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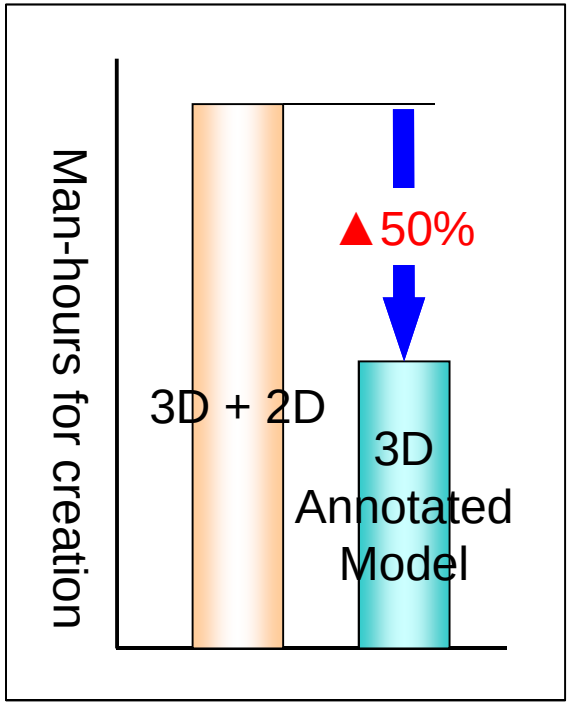
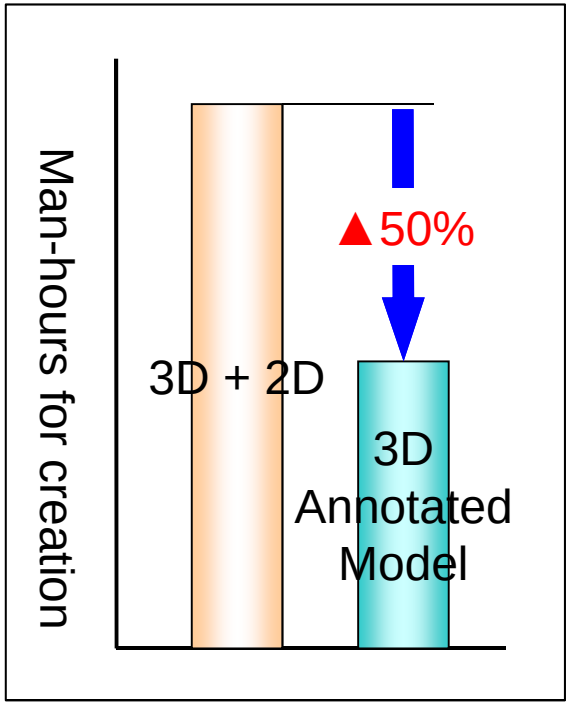
Product Development



Manufacturing Work Instructions



An OEM study validated a 50 % man-hour reduction using 3D Annotated Models

Virtual Verification

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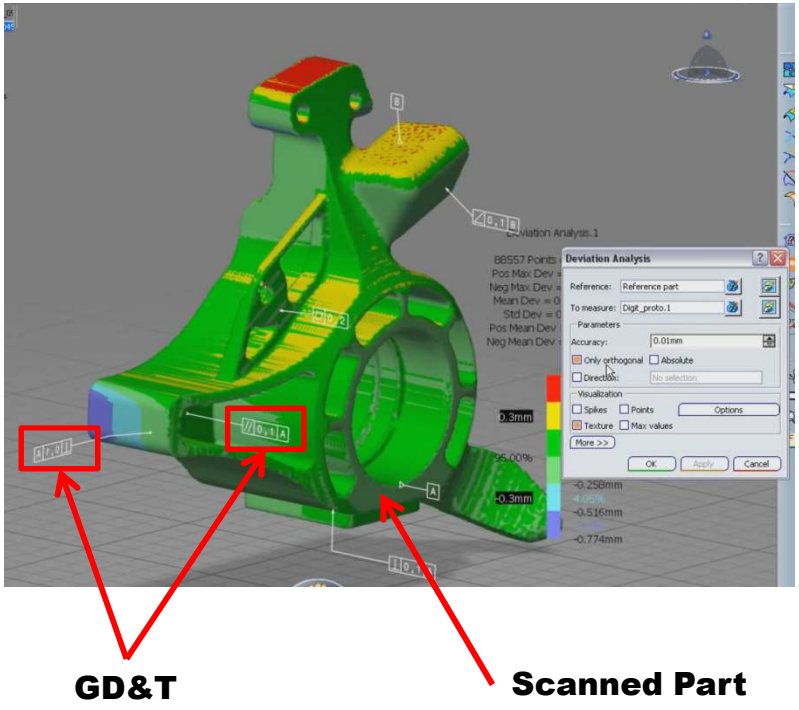
Virtual verification QSR/DSE (Compare a scanned part to 3D GD&T model) Higher priority for profile and position based callout in GD&T compare

Virtual verification can significantly reduce PPAP cost and be a powerful tool in 6 sigma studies



Model Based Dimensional Analysis

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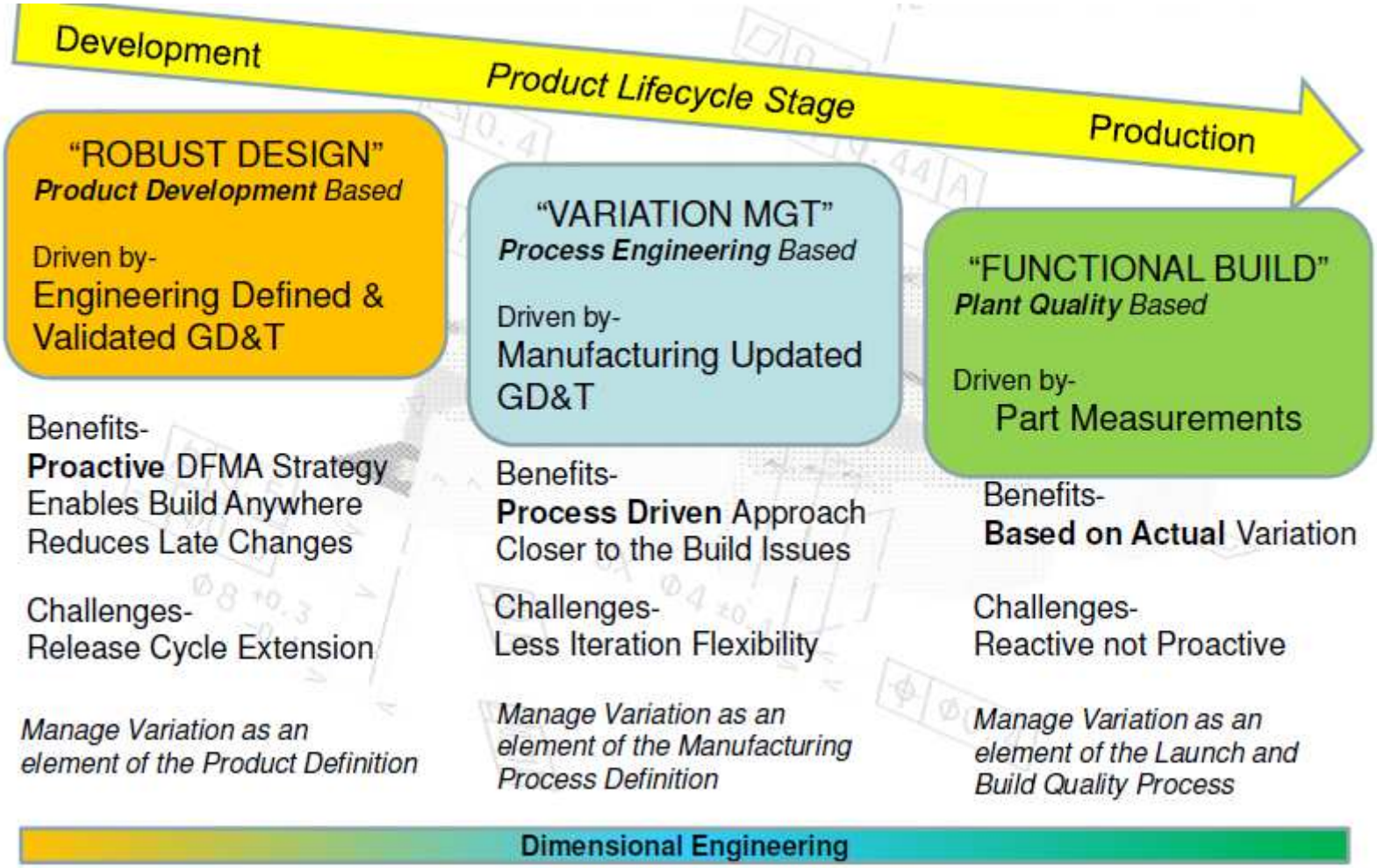

Technical Data Package
Release to Release GD&T Compare

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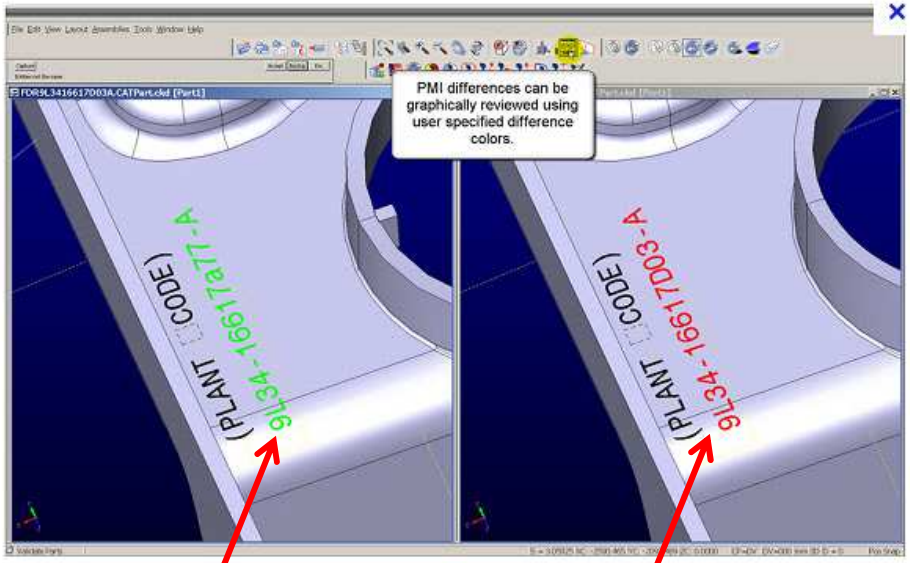
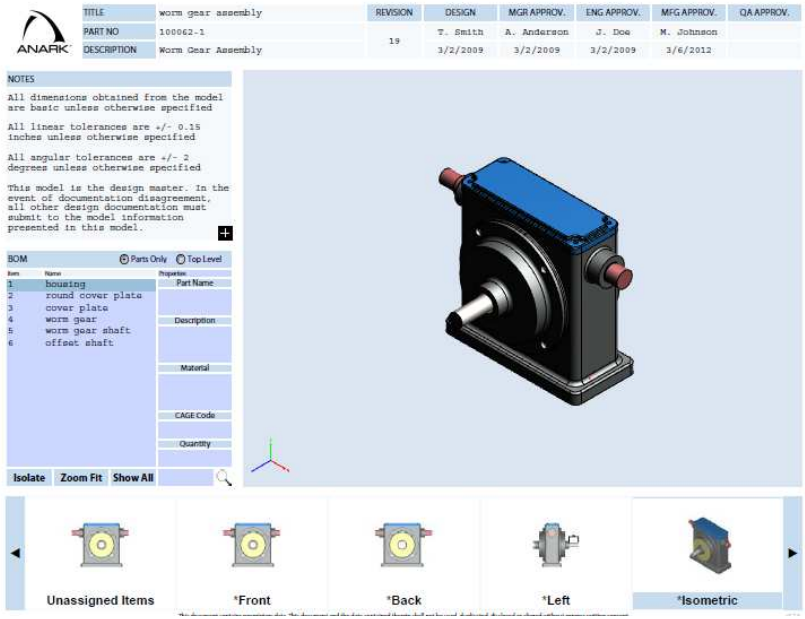


New Annotations **Old Annotations**



Supplier BOM Package

MBE Implementation: Important points to be considered

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